# List of the Butterflies from Ishigaki Island, the Southern Loochoos, collected by Dr. R. KANO, with the Description of a New Subspecies (1)

By KEIICHI OMOTO[1]

Concerning the butterfly fauna of the Yaeyama Islands (Ishigaki, Iriomote, Hateruma, Yonaguni and adjacent islets), the southernmost Loochoos, we have been almost lacking in recent records, except some reports of SHIRÔZU (1952, 1953), though in prewar days lists made by several authors were known : MIKIHARA and KUROIWA (1895) ; TAKANO (1904) ; SONAN (1924) ; IWASAKI (1934) etc., to which the only and interesting itinerary of ESAKI (1934) should be added.

Dr. ROKURO KANO[2] who recently visited the archipelago twice with a view to medical research, in 1954 and 1955, collected various kinds of insects during his 200 days' stay mainly in Ishigaki Island. Butterflies brought home by him were 600 odd specimens of 54 species collected in 1954, contaning some from Okinawa and Miyako Islands, and 40 species, 142 specimens in 1955. In addition to these, more than 200 specimens were thenceforth collected in Ishigaki and Yonaguni Islands by KEN-ICHI ANIYA[3], who sent all the materials to Dr. KANO, so that the collection has up to now amounted to 60 species, nearly 1,000 specimens in all. These recently collected buttreflies have been entrusted to the writer for preparation and study. Though not perfect, the collection is rich enough for taking a general view of the present butterfly fauna of Ishigaki Is., and also contains a number of species which have hitherto been but little known to us.

In the present list the writer has enumerated the above 60 species : 59 from Ishigaki, 1 from Okinawa Is., all with detailed data, and also with specific descriptions of the important characteristics of several worthy of mention. Notes on habits and habitats of the butterflies are based upon Dr. KANO's observations in the locality. Unless otherwise stated, all the specimens in the list were collected by Dr. KANO in Ishigaki Island.

In publishing this list the writer wishes to express his deep sense of gratitude to Dr. KANO for his kindness and support given him during the work, and, to Messrs. K. ANIYA and SEIJI HIGASHIHIRACHI[4] of Ishigaki city, who have kindly offered a lot of materials for this study. The writer is also very deeply indebted to the late Prof. T. ESAKI, Dr. T. SHIRAKI, Dr. A. KAWADA, Dr. S. ASAHINA, Prof. T. SHIRÔZU, Mr. T. IWASE, Mr. K. HAYASHI, Mr. Y. KUROSAWA, Mr. R. KAWASAKI, Dr. M. KUROSU, Dr. M. OGATA, Mr. M. INOUE, Mr. K. MORISHITA and other gentlemen ; members of the Division of Entomology, National Institute of Agricultural Science, of the Department of Entomology, Hokkaido University, and of the Department of Medical Zoology, Tokyo Medical and Dental University, for their kindness in lending the writer materials and reference books, as well as in offering him many suggestions.

## HESPERIIDAE

1. *Hasora chromus inermis* ELWES et EDWARDS, 1897 (fig. 4, ♂ ; 5 & 6, ♀)

*Hasora inermis* ELWES et EDWARDS, Trans. Zool. Soc. Lond., 14(4) : 301, 1897.

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2♂♂ 2♀♀, Sept. 12, 1954, Kareyama ; 1♂, Oct. 3, 1954, Kainan ; 1♂, Nov. 3, 1954, Ohama (ANIYA leg.).

Not common in valleys of Ishigaki Is. Length of the forewing (Hereinafter referred to as LF.) : ♂ 21–24 mm., ♀ 22–25 mm.

2. *Badamia exclamationis* (FABRICIUS, 1775) (fig. 12, ♀)

*Papilio exclamationis* FABRICIUS, Syst. Ent : 530, 1775.

1♂, July 4, 1954, Banna ; 1♀, Sept. 12, 1954, Kareyama ; 1♀, June 24, 1955, Hoshino ; 1♂, 1956, Nosoko (ANIYA leg.).

Not common. LF : 26–30 mm.

3. *Tagiades trebellius martinus* PLÖTZ, 1884 (fig. 3, ♂)

*Tagiades menaka martinus* PLÖTZ, Jahrb. Nass. Ver. Naturk. 37 : 47, 1884.

3♂♂ 2♀♀, Sept. 12, 1954, Kareyama ; 1♂, Oct. 3, 1954, Kainan ; 1♂, June 24, 1955, Hoshino.

This species is not common in valleys. It flies very swiftly and settles on the underside of a leaf with the wings flat. LF : ♂ 19–20 mm., ♀ 19–21 mm.

4. *Notocrypta curvifascia curvifascia* (FELDER, 1862)

*Plesioneura curvifascia* FELDER, Wien. Ent. Mon. 6 : 29, 1862.

1♂, July 4, 1954, Banna ; 1♂. Oct. 3, 1954, Kainan ; 1♀, July 3, 1955, Kareyama.

Not common in forest hills of the Island. LF : 19–20 mm.

5. *Udaspes folus* (CRAMER, 1775)

*Papilio folus* CRAMER, Pap. Exot., 1 : 118, 1775.

1♀, Aug. 3, 1954, Sonai, Yonaguni Is. ; 1♂, March 6, 1955, Ohama (ANIYA leg.) ; 1♀, July 2, 1955, Banna ; 1♀, May 5, 1956, Tonosniro (ANIYA leg.).

This species is not common in Yaeyama, and is said to have the less strong flight than the other Hesperiid butterflies. LF : 25–27 mm.

6. *Telicota colon stinga* EVANS, 1949 (Fig. A, ♂ genitalia ; figs. 1 & 2, ♂)

*Telicota colon stinga* EVANS, Cat. Hesp., p. 392, 1949.

2♂♂, July 4, 1954, Banna ; 1♂, Sept. 19, 1954, Kareyama ; 1♂, Nov. 7, 1954, Ohama (ANIYA leg,) ; 2♂♂, July 2, 1955, Banna.

In Formosa occur three *Telicota*-species ; *colon stinga* EVANS, *ancilla horisha* EVANS and *ohara formosana* FRUHSTORFER, among which the first two were formerly often confused under the Japanese name "*Taiwanaka-seseri*", being misidentified by several authors with *T. augias* LINNÉ. *T. krefftii* H. SCHÄFFER was also used, but the name is now considered as of a subspecies of *augias* LINNÉ, which does not occur in Formosa.

*T. colon* resembles in appearance very closely *T. ancilla*, but a careful comparison between the two species in the wing pattern as well as the male genitalia makes it clear that they can be separated as distinct species. The chief differences in the male are as follows. Forewing termen nearly straight in *colon*, more or less rounded in *ancilla*, consequently, forewing narrower and produced in the former, broader in the latter. Markings on the upperside generally yellowish in *colon*, more orange colored in *ancilla*. Origin of vein 3 very much nearer to the origin of vein 2 than to the origin of vein 4 in *colon*, about middle between the origin of vein 2 and that of vein 4 in *ancilla*. Forewing upperside stigma bordered outwardly with a broader black area in *colon*, without the black area in *ancilla*.

Both species are widely distributed in the Indo-Australian region, but only *colon* seems to reach

Yaeyama. The species occurs in Ishigaki Is. throughout the year but is not common, especially, the female seems to be very rare. LF : 15–17 mm.

7. *Parnara naso bada* (MOORE, 1878) (figs. 9 & 10, ♂)

*Hesperia bada* MOORE, Proc. Zool. Soc. Lond. : 686, 1878.

2♂♂, Sept. 12, 1954, Kareyama.

This species has a exceedingly wide range from tropical Africa throughout the Oriental region to Australia. It is well known as one of the harmful insects on rice-plants.

The butterfly can easily be distinguished from *P. guttata* by the following points. Size smaller ; the forewing above without two uppercell spots ; the hindwing above with only two small spots, while in *guttata* there are four conspicuous spots. Underside with ochreous groundcolor paler ; the hindwing with small, round dots in spaces 2, 3, 4 and 5, of which the last two are generally minute. LF : 15 mm.

8. *Parnara guttata guttata* (BREMER et GREY, 1853) (fig. 11, ♂)

*Eudamus guttatus* BREMER et GREY, Schmett. N-Chinas : 10, 1853.

2♂♂ 1♀, Sept. 12, 19, 1954, Kareyama ; 1♂, Oct. 3, 1954, Kainan.

This species is probably the commonest Hesperiid butterfly in southern parts of Japan, but it is by no means common in Yaeyama and Formosa. LF : ♂ 16–18 mm., ♀ 19.5 mm.

9. *Borbo cinnara* (WALLACE, 1866) (figs. 7 & 8, ♀)

*Hesperia cinnara* WALLACE, Proc. Zool. Soc. Lond. : 361, 1866.

1♂ 2♀♀, Oct. 3, 1954, Kainan.

This species was formerly known as *Parnara colaca* MOORE, which, according to EVANS is a synonym of *B. cinnara.*

The butterfly is distinguishable from the foregoing species by having a yellowish non-hyaline spot in space 1b on the upperside of the forewing. Hindwing above often without any spot. Underside groundcolor is ochreous, generally with small spots in spaces 2, 3 and 6 on the hindwing. In common with the preceding two species of the genus *Parnara, B. cinnara* shows no important sex difference in the wing pattern. LF : 15–16 mm.

10. *Pelopidas mathias oberthüri* EVANS, 1937 (Fig. C, ♂ genitalia ; fig. 13, ♂ ; 14, ♀)

*Pelopidas mathias oberthüri* EVANS, Entomologist, 76 (886) : 65, 1937.

1♀, June 24, 1954, Hirae ; 1♂, July 4, 1954, Banna ; 1♂, July 16, 1955, Amitori, Iriomote Is.

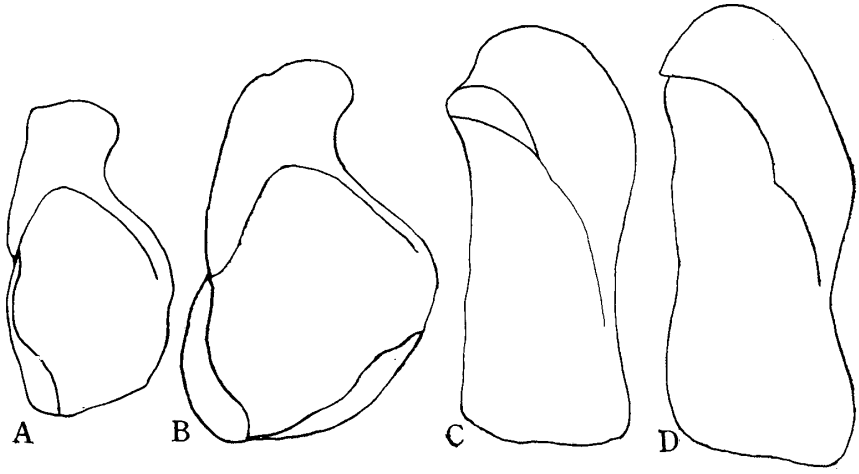
This and the following species, *agna* MOORE, are easily distinguished from allied species in the Loochoos by having on the forewing above the discal stigma in the males. The females have on the upperside, in general, hyaline spots in spaces 2 to 4 and 6 to 8 of the forewing, as well as two spots in the cell. In space 1b of the forewing above, there are two white spots, of which the upper one is generally minute. The hindwing beneath has a post-discal series of white dots, and often a small cell-spot. According to EVANS (1937), subsp. *oberthüri* has smaller spots on the upperside of the forewing and greener groundcolor with fewer spots on the underside of the hindwing than subsp. *mathias* FABRICIUS from India, showing an approach to the following species, *agna* MOORE. Not rare throughout the Loochoos. LF : ♂ 17 mm., ♀ 18 mm.

11. *Pelopidas agna agna* (MOORE, 1865) (Fig. D, ♂ genitalia ; figs. 15 & 16, ♂)

*Hesperia agna* MOORE, Proc. Zool. Soc. Lond. : 791–792, 1865.

1♂, Sept. 19, 1954, Kareyama ; 1♂, June 29, 1955, Kainan ; 1♂, July 4, 1955, Ishigaki city ; 1♂, Aug. 7, 1956, Banna (ANIYA leg.) ; 1♂, Aug. 21, 1956, Ohama (ANIYA leg.).

*P. agna* MOORE has up to now been recorded only once from the whole Loochoos by SHIRÔZU in 1952. The species has been little known to us, as being well confused with its closest relative, the foregoing *mathias oberthüri*. Both species are alike widely distributed from India to Australia and also not rare in Formosa, though *agna* has not yet been found in Japan and Okinawa. The writer has found in Dr. KANO's collection the above 5 males from Ishigaki Is., which may show the constant occurrence of the species in the Island.




Figs. A–B. Inside view of left valvae of the male genitalia of two species of *Telicota*. A. *Telicota colon stigna* EVANS, Ishigaki Is. B. *Telicota ancilla horisha* EVANS, Formosa.

Figs. C–D. Inside view of right valvae of the male genitalia of two species of *Pelopidas* from Ishigaki Is. C. *Pelopidas mathias oberthüri* EVANS D. *Pelopidas agna agna* (MOORE).

*P. agna* and *P. mathias oberthüri* are hardly distinguishable especially in the females. An examination of the genitalia may be necessary for exact identification of the species, but the following scheme may be helpful for the separation of *agna* from *mathias oberthüri*. It is often written in texts that the females of both species can be sparated by the position of the two intra-cell spots of the forewing above, namely, continuation of the line through these spots usually meets vein 1b on the basal side of the larger spot in space 1b in *agna*, while it meets the same spot in *mathias*. So far as the writer could examine, however, this characteristic seems not to be applicable to the case with subsp. *oberthüri*, which stands closer to *agna agna* than in the other subspecies of *mathias* as mentioned before. LF : ♂ 17–18 mm.

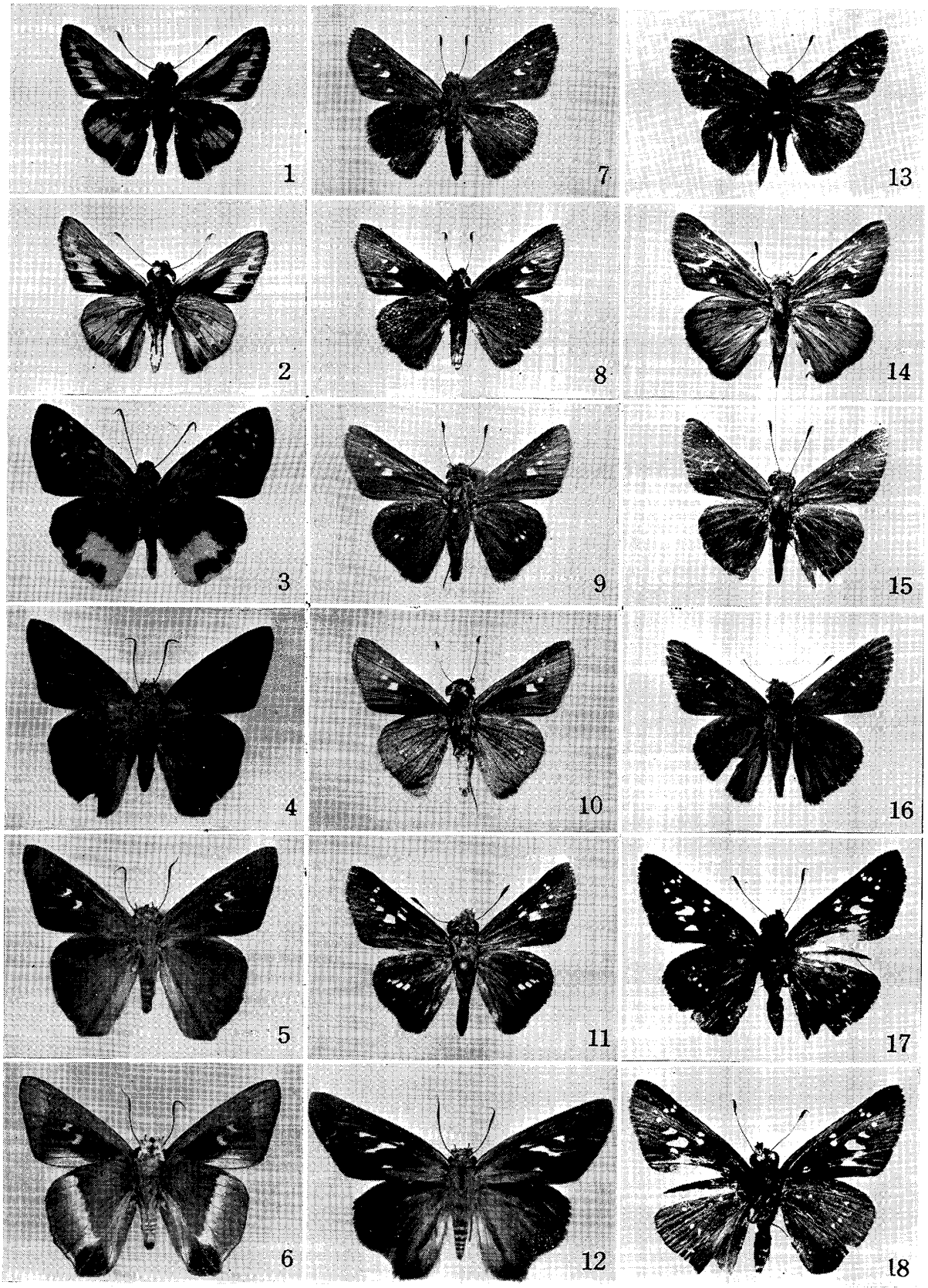
| | *P. agna agna* MOORE | *P. mathias oberthüri* EVANS |
|---|---|---|
| Shape of the forewing | Termen nearly straight ; apex more pointed. | Termen rounded nearly at the end of vein 5. |
| Male discal stigma | Shorter and inconspicuous ; the lower end on vein 1b just below the origin of vein 2 or nearer the termen. | Longer and conspicuous ; the lower end on vein 1b nearer the base than the termen. |
| Spots of the forewing above in the male | Generally reduced ; spot in space 2 narrow. | Generally well marked ; spot in space 2 rounded. |

12. *Pelopidas baibarana* (MATSUMURA, 1929) **comb. nov.** (figs. 17 & 18, ♀)

*Parnara baibarana* MATSUMURA, Ins. Mats., 3(2/3) : 107, 1929

1♀, June 29, 1955, Kainan.

The species has been erroneously treated by EVANS (1949) as a synonym of *Polytremis lubricans*



*taiwana* MATSUMURA, the species little related to the former. The description with a figure in MATSUMURA's book, "6000 Illustrated Insects of Japan-Fmpire" (1931), on which EVANS has possibly based his synonymy, is useless for the determination of this species, as it is of another species probably misidentified with *P. baibarana.*

The writer has had a chance to observe two specimens of *P. baibarana,* apparently 1♂ 1♀ including the type specimen preserved in Hokkaido University, and has come to the conclusion that this undoubtedly is a distinct species within the genus *Pelopidas.* The male appears to have no discal stigma, being very similar to the female in the spotting.

♀ : Resembles the same sex of *mathias oberthüri,* but differs from it by the much larger size, by the much more developed spots and by that the hindwing possesses a post-discal series of white dots in spaces 2, 3, 4 and 5 above and beneath. LF : 21 mm.

The present record is the first one of this species outside Formosa.

Explanation of Photos

Fig. 1. *Telicota colon stinga* EVANS ♂. Fig. 2. Ditto, (underside). Fig. 3. *Tagiades trebellius martinus* PLÖTZ ♂. Fig. 4. *Hasora chromus inermis* ELWES et EDWARDS ♂. Fig. 5. Ditto, ♀. Fig. 6. Ditto, (underside). Fig. 7. *Borbo cinnara* (WALLACE), ♀. Fig. 8. Ditto, (underside). Fig. 9. *Parnara naso bada* (MOORE), ♂. Fig. 10. Ditto, (underside). Fig. 11. *Parnara guttata guttata* (BREMER et GREY), ♂. Fig. 12. *Badamia exclamationis* (FABRICIUS), ♀. Fig. 13. *Pelopidas mathias oberthüri* EVANS ♂. Fig. 14. Ditto, ♀. Fig. 15. *Pelopidas agna agna* (MOORE), ♂. Fig. 16. Ditto, ♂. Fig. 17. *Pelopidas baibarana* (MATSUMURA), ♀. Fig. 18. Ditto, (underside).

# A Systematic Study of the Japanese Lithosiinae (Arctiidae) (2)

By MASAC OKANO[1)]

*Pelosia ramosula japonica* **subsp. nov.**

*Pelosia ramosula* MATSUMURA (part.), Illus. Comm. Ins. Jap., 2 : 45 (in Japanese text), 62 (in English text), 1930 (Honshu).

♂. Head, thorax and legs pale greyish brown ; fore and middle legs infuscated outside. Patagia and tegulae brownish. Abdomen pale grey with a faint brownish tinge ; anal tuft brownish. Forewing pale greyish brown, streaked with fuscous along the veins. Hindwing paler than forewing, without markings. Under side. Forewing and costal half of hindwing suffused with fuscous.

♀. Forewing narrower than in male. Under side without fuscous area.

Length of forewing : 11-13 mm. (♂), 12 mm. (♀).

Habitat : North Honshu (Iwate Pref.).

Holotype ♂ : Ueda, Morioka, Iwate Pref., 17. VII. 1955, M. OKANO leg.

Allotype ♀ : Type-locality, 27. VII. 1951, M. OKANO leg.

Paratypes : Jôbôji, Ninohe-gun, Iwate Pref., 15, VII. 1944, 1♂ ; typelocality, 20. VII. 1950, 1♂ ; 26. VIII. 1955, 1♂ ; 2. VI. 1957, 1♂, M. OKANO leg.

This new subspecies is closely similar to subsp. *ramosula* STAUDINGER from Amur and Ussuri distrct, but decidedly smaller ; in male, fuscous streaks of forewing above more prominent, hind mar-

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